ST. LAWRENCE VISION 2000

ANNUAL REPORT

2000-2001

Canada

St. Lawrence Vision 2000

Québec

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ANNUAL REPORT
2000-2001

St. Lawrence
Vision 2000

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Françoise Lapointe
Environment Canada

MESSAGE FROM THE MINISTER OF THE ENVIRONMENT OF CANADA

The St. Lawrence River has always played a major role in the economy and in the social development of the people living along its banks. As a natural environment of incomparable richness, it has made a very substantial contribution to an increased standard of living by providing products and services that form the basis for a broad range of human activities.

It gives me great pleasure to present the Annual Report on the St. Lawrence Vision 2000 Plan, containing the highlights, a description of the progress made and the results achieved during the period from April 1, 2000 to March 31, 2001. You will see all that has been attained as we reach the halfway point in this Phase III of the St. Lawrence Action Plan, which began in 1998.

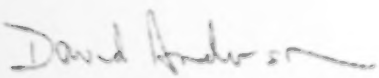
Substantial advances have been made in creating sound and effective partnerships within the Canadian public. Efforts have also been implemented to communicate the knowledge gained to the communities concerned so that they will find it easier to make decisions and understand the actions that need to be taken.

I am particularly proud to note the concrete results that have been achieved, including measures to reduce the speed of merchant ships as part of a sustainable navigation strategy. This is an excellent example of cooperation between the SLV 2000 partners and the shipping industry that has led to innovative concrete action to reduce erosion of the banks in areas of great biological value.

UNESCO proclaimed 2001 to be the International Year of Volunteers and the last twelve months have made clear how essential public involvement is to the success of our joint projects and to the protection and maintenance of a healthy environment. Public opinion polls constantly indicate the concern that people have for the St. Lawrence. In effect, the number and skills of the people who devote their time and energy to promoting initiatives such as St. Lawrence Vision 2000 never cease to amaze me.

Protection of the St. Lawrence ecosystem poses enormous challenges and requires innovative and cooperative solutions. The St. Lawrence Action Plan Vision 2000 forms the basis for the fundamental principle of ecology that everything is closely united. It is accordingly impossible to separate species in the wild from their habitats, just as we cannot separate the people living on the banks of the St. Lawrence from their relationship with the air, land and water where all those species live.

While the challenge posed by the St. Lawrence is substantial in many respects, the new approaches being taken to the problems are most stimulating because they indicate that we are firmly resolved to face the future with common sense and maturity.



***David Anderson**, P.C., M.P.*
Minister of the Environment

MESSAGE FROM THE MINISTER OF STATE FOR MUNICIPAL AFFAIRS AND GREATER MONTRÉAL, THE ENVIRONMENT AND WATER OF QUÉBEC

As Minister of State for Municipal Affairs and Greater Montréal, the Environment and Water of Québec, I am pleased to present the Annual Report of the St. Lawrence Vision 2000 Action Plan for the year ending March 31, 2001. This report outlines the results achieved in the third year of Phase III and reviews the action taken to improve and maintain the quality of the mighty St. Lawrence River, one of Québec's most invaluable natural resources.

In view of the river's strategic importance for Québec, all measures to protect and conserve this unique natural heritage have been encouraged. The St. Lawrence Vision 2000 Action Plan is a key undertaking that, for more than 12 years now, has helped to ensure a viable environment for future generations. That is why all the initiatives taken are so promising, including a program introduced in the last year to monitor the state of the St. Lawrence carried out in cooperation with various Action Plan partners, including the Ministère de l'Environnement du Québec.

The Action Plan's accomplishments are the result of the joint efforts of everyone associated with this project aimed at improving the health of the St. Lawrence River ecosystem and, in so doing, that of the citizens of Québec. I would particularly like to underscore the contribution of riverside communities, which have played a crucial role in maintaining the environmental integrity of the St. Lawrence. Public participation is both valuable and essential for ensuring the sustainable use of this important resource.

The St. Lawrence River and the development of Québec go hand in hand, and all have shared their concerns about this invaluable source of well-being and socio-economic development with us on various occasions. That is why the Québec government is taking part in projects such as the St. Lawrence Vision 2000 Action Plan.

I would like to encourage all SLV 2000 partners to pursue their collective efforts with the same enthusiasm. They are proof positive of the success achieved in protecting and enhancing the St. Lawrence River.

André Boisclair
Ministre d'État aux Affaires municipales et à la Métropole, à l'Environnement et à l'Eau du Québec

Québec, March 2002

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MESSAGE FROM THE AGREEMENT CO-CHAIRS

As we come to the end of 2000-2001, the third year of Phase III of the St. Lawrence Vision 2000 Action Plan, we are very pleased to present the results of the work carried out by all of the partners to the Canada-Quebec Agreement for Joint Action on the St. Lawrence to protect the health of the ecosystem and human health and encourage the participation of riverside communities with the goal of improving access to and recovering uses of the St. Lawrence River.

We have witnessed major collaborative initiatives in the last year. Citizens' groups implemented 30 or so local projects with the financial assistance of the Community Interaction Program. ZIP (Zones of Prime Concern) committees, of which there are now 14, took significant strides towards implementing their Environmental Remedial Action Plans (ERAPs) along the St. Lawrence. More specifically, the Rivière-du-l'Estuaire, Baie des Chaleurs et Îles de la Madeleine ZIP committees, in partnership with the members of the Human Health component, developed campaigns to educate the public about the health risks of eating shellfish.

Under the Agriculture component, a number of farmers took advantage of the agro-environmental program supporting the pest management strategy to carry out 15 or so technology development and transfer projects designed to reduce pesticide use.

The participation of fifteen municipalities allowed the Industrial and Urban Cooperation Committee to complete a major study on the toxicity of municipal effluences. Solid partnerships will also be required to implement solutions to the problems identified.

A voluntary initiative advocated by the marine industry in response to the issue of shoreline erosion caused by wave action is also very promising. The Navigation Cooperation Committee was able to forge a partnership between the Canadian Coast Guard, which monitors compliance, and the marine industry to allow pilots to reduce the speed of commercial vessels in the sensitive stretch of the river between Sorel and Verchères. A large number of users are complying with this voluntary measure undertaken in fall 2000.

A fish pass at the St. Ours Dam was completed in spring 2001 with the cooperation of seven governmental partners and two non-governmental organizations. The pass gives several species of fish, including five species in precarious status, access to habitats located between the Chambly and St. Ours dams on the Richelieu River.

Many other initiatives were carried out in 2000-2001 and we invite you to read more about them in this annual report. We would like to thank everyone who shares our vision for the great St. Lawrence ecosystem by contributing directly or indirectly to these achievements.

Mimi Breton
Co-chair for Canada
St. Lawrence Vision 2000

Jean Maurice Latulippe
Co-chair for Quebec
St. Lawrence Vision 2000

ST. LAWRENCE VISION 2000 ACTION PLAN - PHASE III

A second progress report

This annual report is the second progress report to be written since the Canada-Quebec Agreement for Joint Action on the St. Lawrence was signed on June 8, 1998. The Agreement governs Phase III of the St. Lawrence Vision 2000 (SLV 2000) Action Plan, which is slated to run until March 2003. It contains information on the targeted results, the highlights and the main activities carried out under each of the Action Plan's six components between April 1, 2000 and March 31, 2001, as well as its communications activities. It also presents the expenditures incurred by the Canadian and Quebec governments for the corresponding period. By the end of 2000-2001, nearly $165 million had been spent, out of the total commitment of $239 million.

SLV 2000 has three major objectives: protecting the health of the ecosystem, protecting human health and encouraging the participation of riverside communities. The ultimate goal of all of the Action Plan's components is to ensure the sustainable development of the St. Lawrence ecosystem.

The approach taken by SLV 2000, which emphasizes prevention and community involvement, is producing increasingly convincing results. Voluntary measures and good environmental practices have been established in the areas of human health, industrial and urban clean-up, agriculture and navigation. Riverside communities are acquiring the knowledge, tools and know-how required to implement environmental initiatives they consider as a priority in their communities.

Cooperation and management challenges

From the outset, SLV 2000 has applied management-by-results principles directed primarily at obtaining concrete, measurable results and has promoted concerted action by partners.

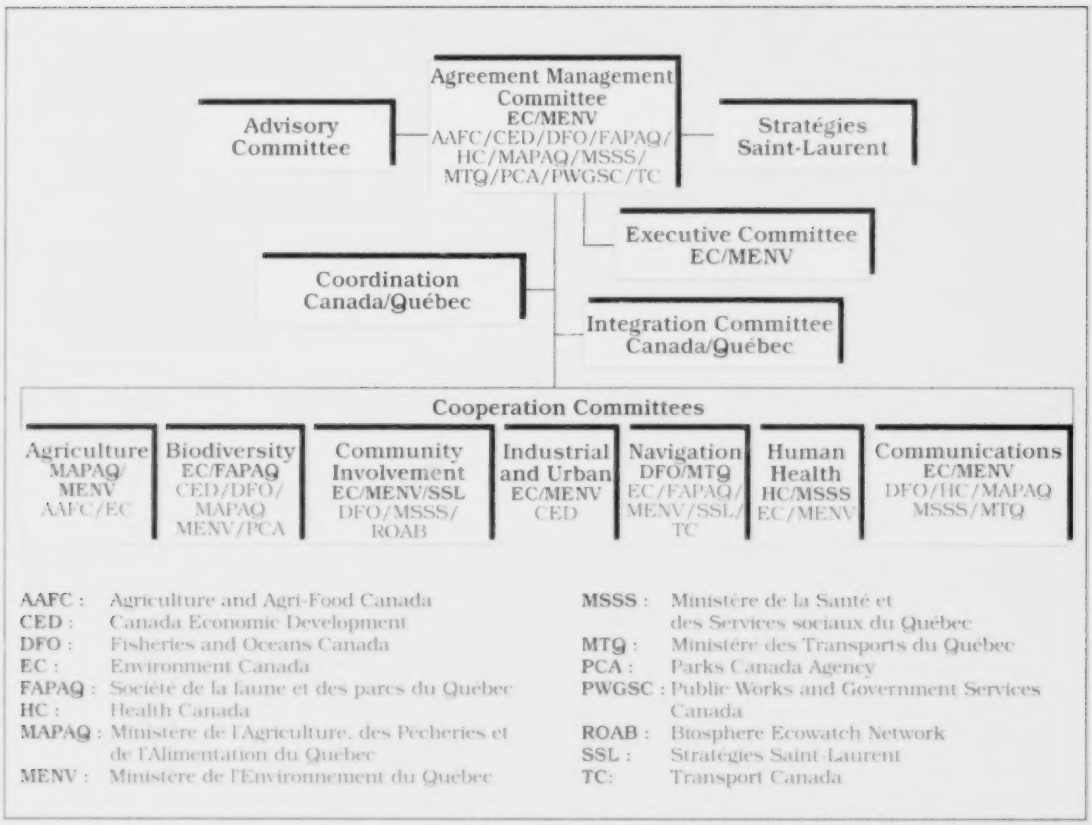
The following organization chart shows the Agreement's management structure and the contribution of the 13 government partners and three major groups of non-governmental partners: the Advisory Committee, Stratégies Saint-Laurent and the Biosphere Ecowatch Network.

Using the new management tools created for Phase III, namely the management tracking system and performance framework indicators, the agreement's administrators can track actual expenditures and activities relative to the targeted commitments on a regular basis.

These tools proved particularly useful during the mid-term review carried out in 2000-2001. The exercise drew on three sources of information: a review by a team of federal and provincial evaluators, an opinion issued by the Advisory Committee and consultations of the partners at a June 2000 workshop. The two-day event was an opportunity for the Action Plan's 60-some participants to hear about the progress made under the various components and offer suggestions on how to improve performance and optimize results by the time the plan comes to an end in March 2003.

The review enabled the Agreement's managers to identify two priority areas that would benefit from addi-

SLV 2000 MANAGEMENT STRUCTURE



AAFC : Agriculture and Agri-Food Canada
CED : Canada Economic Development
DFO : Fisheries and Oceans Canada
EC : Environment Canada
FAPAQ : Société de la faune et des parcs du Québec
HC : Health Canada
MAPAQ : Ministère de l'Agriculture, des Pêcheries et de l'Alimentation du Québec
MENV : Ministère de l'Environnement du Québec
MSSS : Ministère de la Santé et des Services sociaux du Québec
MTQ : Ministère des Transports du Québec
PCA : Parks Canada Agency
PWGSC : Public Works and Government Services Canada
ROAB : Biosphere Ecowatch Network
SSL : Stratégies Saint-Laurent
TC: Transport Canada

tional funding during the Action Plan's last two years: the sustainable navigation strategy and the state of the St. Lawrence monitoring. All cooperation committees have already undertaken a number of actions on the basis of the recommendations made during the mid-term review.

AGRICULTURE

Since the beginning of Phase III in 1998, the main objectives of the Agriculture component have been to reduce pesticide use and encourage agroenvironmental management practices in the main agricultural watersheds of the St. Lawrence and for targeted crops.

In a mid-term review of SLV 2000, the Agriculture Cooperation Committee confirmed the relevance of its initial objectives but agreed on the need to improve some of their means of action and increase the transfer of available technologies to farmers.

Reducing pesticide use

Various activities aimed at reducing pesticide use are being carried out under the *Programme agroenvironnemental de soutien à la Stratégie phytosanitaire*, which was implemented in 1998. This funding program supports the pest management strategy devised by the Ministère de l'Agriculture, des Pêcheries et de l'Alimentation du Québec (MAPAQ) and its partners. It advocates a reduction in agricultural pesticide use and an increase in the amount of farmland where integrated pest management practices are carried out. The sectors targeted are field crops (grains, corn and soya), apples and potatoes. A breakdown of projects carried out since 1998 and the funding received, which totals nearly $1.7 million, is found in the table below. When the financial participation of the various stakeholders is taken into account, the funding exceeds $3 million.

Many of the projects selected in 2000-2001 focused on technology transfer. Some were aimed at promoting and implementing integrated pest management practices and reducing herbicide use in the Chaudière, L'Assomption, Richelieu and Yamaska river watersheds. Training workshops and experiments to test new integrated pest management methods were carried out on farms in the field crops sector. Assessments of techniques involving the band application of herbicides to potato crops led to on-farm demonstrations. Finally, various publications, such as a guide on integrated pest management for apples (*Guide de gestion intégrée des ennemis*

TARGET RESULTS FOR
March 31, 2003

Reduce by 50% the use of pesticides and obtain 70% of the area under integrated control measures by 2003 and follow-up to verify the achievement of results.

Set up 5 advisory clubs on the Boyer River in order to ensure an agro-environmental management of the watershed and to reestablish smelt.

Validate an indicator on the risks of surface water contamination by phosphorus.

Carry out control and inspection in the area of agricultural cleaning up and make agricultural industries conform to the ***Règlement sur la réduction de la pollution d'origine agricole*** on St. Lawrence tributaries.

AGROENVIRONNEMENTAL PROGRAM SUPPORTING THE PEST MANAGEMENT STRATEGY

Fiscal Year	Project Category		Number of Projects	Amounts Allocated
1998 - 1999	Technology transfer		14	$218,063
	Technology development		12	$358,281
	Training		11	$305,448
		Total	37	$881,792
1999 - 2000	Technology transfer		8	$169,417
	Technology development		6	$209,514
	Training		0	$0
		Total	14	$378,931
2000 - 2001	Technology transfer		11	$247,901
	Technology development		5	$175,902
	Training		0	$0
		Total	16	$423,803
		Total	67	$1,684,526

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Photo : Luc Vallières, ministère de l'Agriculture, des Pêcheries et de l'Alimentation du Québec

de la pomme), increased the awareness of agricultural stakeholders.

Environment Canada and Agriculture and Agri-Food Canada are continuing to develop and validate forecasting models based on agrometeorological data. These management tools provide very good prospects for reducing pesticide use by maximizing the effectiveness of treatments, reducing the number of interventions and decreasing the applications rates.

The Ministère de l'Environnement du Québec is continuing to monitor pesticides at four main stations located on the St. Zéphirin, Chibouet, Des Hurons and St. Régis rivers. According to preliminary data compiled in 1998, the total quantity of pesticides per hectare used on field and potato crops appeared to have fallen by 10% compared to 1997.

Finally, a greater number of farmers and agricultural advisors have been made aware of the importance of incorporating integrated control measures into agroenvironmental pest management practices. In 2000-2001, integrated control measures were carried out on more than 40,000 ha of hectarage under crops, or 24% of treated areas covered by agroenvironmental advisory clubs for the same period.

Restoring the Boyer River

Initial efforts to encourage 175 farmers to follow agroenvironmental practices through the creation of advisory clubs were reviewed with a view to encouraging local ownership. In 2000, a group working to restore the Boyer River, the Groupe d'intervention pour la restauration de la Boyer, was mandated to encourage farmers to use these agroenvironmental practices. The group's initial efforts led to the establishment of guidelines and a dynamic operating structure for the project and an agreement on an overall plan with the project's partners.

Since 1998, 80 farmers have joined "green clubs" and more than 170 farming enterprises have acquired leakproof manure storage facilities.

Modelling surface water contamination by phosphorous

Projects are under way to model phosphorous migration in the soil in order to formulate appropriate recommendations for fertilizer use. The modelling takes into account preferential flow, saturation and soil

phosphorous content. This work is helping to establish a risk indicator for surface water contamination.

Verifying of compliance with the Regulation respecting the reduction of pollution from agricultural sources

Since 1998, over 7,500 visits and inspections have been made to farming enterprises in six regions: Chaudière-Appalaches, Montreal-Laval-Lanaudière, Montérégie East, Montérégie West, Central Quebec and the Eastern Townships. So an average of 2,500 to 3,000 visits and inspections are carried out each year in compliance with storage and spreading standards for manure and slurry.

Farms in these same regions have also received financial assistance in order to meet the standards in force. Thanks to an additional $23 million contribution from MAPAQ, the objective of 2,000 farms compliant with the standards by the end of Phase III of SLV 2000 was achieved in 2000-2001 and will be greatly surpassed by 2003.

BIODIVERSITY

TARGET RESULTS FOR
March 31, 2003

Contribute to safeguard 35 threatened species of fauna and flora.

Control the introduction of exotic species and limit the impacts of invasive species.

Protect 125,000 ha of natural habitats, including direct acquisition of 1,660 hectares.

Develop and implement seven management and conservation plans for sensitive habitats.

Educate and heighten public awareness on the ecological value of the St. Lawrence.

Develop structures and sites with ecological potential to promote public access to the St. Lawrence.

Assess impacts of water level variations due to climate change on the ecosystem and on the users of the St. Lawrence.

Provide forecasts and analyses on the state of the St. Lawrence by implementing an integrated monitoring system.

Efforts to protect species and conserve habitats under the Biodiversity component are continuing. The highlights of 2000-2001 were the construction of a fish pass at the St. Ours Dam, the progress of a number of natural habitat protection projects and SLV 2000 work on water levels in connection with the International Joint Commission (IJC).

Helping to save 35 plant and animal species at risk

One of the Biodiversity component's biggest achievements in 2000-2001 was without a doubt the construction of a fish pass at the St. Ours Dam. The Vianney-Legendre Fish Pass, named in honour of the great Quebec ichthyologist, allows five species in precarious status to once again swim freely up the Richelieu River: lake sturgeon, American eel, American shad, river redhorse and copper redhorse.

Considerable effort was expended in the first few years of Phase III of SLV 2000 to find the $1.8 million needed to build the fish pass. This effort paid off in summer 2000, when a funding agreement was signed by nine partners: Projet Rivercruise, the Fondation de la faune du Québec, the Société de la Faune et des Parcs du Québec, the Ministère de l'Agriculture, des Pêcheries et de l'Alimentation du Québec, Fisheries and Oceans Canada, Environment Canada, Transport Canada, Canada Economic Development and Parks Canada. Parks Canada was in charge of the project, which was completed in spring 2001. Results after the first few months show that the fish pass is proving to be very effective.

Work to learn more about several species at risk has led to the designation of the Barrow's goldeneye as a species of special concern by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC). A few thousand Barrow's goldeneye from eastern North America winter along the St. Lawrence, making the river critically important for this duck. Research on Atlantic sturgeon has confirmed the presence of spawners in the river, identified potential spawning grounds and provided a better understanding of its movements between freshwater and salt water sectors.

Implementation of the St. Lawrence beluga Recovery Plan continued, in particular through population monitoring, a study of beached carcasses and an evaluation of chemical contamination in the species, which has come to symbolize all species at risk in the St. Lawrence River.

New recovery plans were drawn up for three wildlife species: the American shad, the bald eagle and the peregrine falcon. The implementation of plans was also begun or continued for the western chorus frog, spiny softshell turtle, channel darter and copper redhorse. Concrete action based on these plans is aimed at protecting habitats, acquiring knowledge and educating the public and stakeholders.

Since the beginning of Phase III, 14 action plans to conserve plant species have been initiated. In 2000-2001, 13 new species, including Fernald's milkvetch, erect arrowhead (estuary subspecies), and Antrosti aster, were officially designated threatened species.

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TARGET RESULTS FOR
March 31, 2003

Contribute to safeguard 35 threatened species of fauna and flora.

Control the introduction of exotic species and limit the impacts of invasive species.

Protect 120,000 ha of natural habitats, including direct acquisition of 1,660 hectares.

Develop and implement seven management and conservation plans for sensitive habitats.

Educate and heighten public awareness on the ecological value of the St. Lawrence.

Develop structures and sites with ecological potential to promote public access to the St. Lawrence.

Assess impacts of water level variations due to climate change on the ecosystem and on the uses of the St. Lawrence.

Provide forecasts and analyses on the state of the St. Lawrence by implementing an integrated monitoring system.

Vianney Legendre Fish Pass at the Saint-Ours Canal National Historic Site
Photos: Céline Lachapelle, Environment Canada
Sylvain Paradis, Parks Canada

Finally, efforts to protect the habitat of SLV 2000 priority species continued at four sites: Lac des Chats along the Ottawa River, the Bonaventure barachois, Île des Juifs and Grande Rivière. This involved work towards the purchase of land, the establishment of legal conservation servitudes or the legal designation of plant habitat, as well as work to create the Grande-Rivière and Mont-Saint-Pierre ecological reserves. These efforts are helping to safeguard six SLV 2000 priority species and 20-some threatened or vulnerable species.

Controlling exotic and invasive species

Research on and monitoring of the growing zebra mussel population and an inventory of exotic species in the St. Lawrence provided a fuller picture of the impact these organisms are having on the ecosystem and helped to find solutions to the problems they create. The exotic species inventory revealed a growing, sustained trend towards the introduction of aquatic species in the St. Lawrence River at an average rate of one species annually. They are primarily introduced downstream from the Great Lakes.

The greater snow goose Action Plan, which was implemented in 1999 to minimize the overabundant species' impact on natural habitat and farmland along the river, was enhanced in spring 2000 with the introduction of new management measures. During a spring hunt in spring 2000, 54,600 geese were culled in Quebec. Since the plan's implementation, the greater snow goose population has remained steady at between 800,000 and 1,000,000 individuals.

Protecting 120,000 ha of natural habitat

Three new ecological reserves were created in 2000-2001: Grande-Rivière, Mont-Saint-Pierre and Presqu'île Robillard. Work to create the last reserve began during Phase I of the St. Lawrence Action Plan. In addition, a few hundred hectares were added to

the Grands-Ormes ecological reserve, and two new Quebec provincial parks were established (Hautes-Gorges-de-la-Rivière-Malbaie and Anticosti), as well as the Îlet aux Alouettes wildlife sanctuary.

With the acquisition of Île aux Perroquets, the Mingan Archipelago National Park Reserve was strengthened and the purchase of a portion of protected habitat in the Cacouna area consolidated the Baie-de-L'Isle-Verte National Wildlife Area. Finally, various projects carried out by non-governmental organizations under the *Community Interaction* funding program conserved approximately 100 ha. The many sites and areas protected in 2000-2001, brings the area of natural habitat protected since 1998 to nearly 100,700 ha, or 84% of the target set for March 2003.

Implementing management and conservation plans for sensitive habitats

Characterization studies were carried out and meetings with community stakeholders were held in conjunction with the development of enhancement plans for the St. Maurice, L'Assomption, Fouquette and Ottawa rivers.

A project carried out on the Upper North Shore led to the adoption of an action plan for the integrated management of the coastal zone between Les Escoumins and the Betsiamites River by a committee of local and regional community groups. Some of the actions set out in the plan are aimed at improving the protective status of sensitive environments. Other integrated coastal zone management initiatives were undertaken in Chaleur Bay, Gaspé Bay and on the North Shore. Discussions touched on the creation of round tables that would give interested parties an opportunity to improve environmental management and find solutions to conflicting uses. In addition, in March 2001, a workshop that brought together a number of NGOs working for the marine part of the St. Lawrence was held in Rimouski in order to take stock of progress made in the integrated management of that sector of the river.

Finally, planning continued for the creation of Marine Protected Areas (MPAs) under the *Oceans Act* at sites on the Manicouagan Peninsula and in the St. Lawrence estuary.

Public education and awareness of the ecological value of the St. Lawrence

In 2000-2001, awareness and educational activities related to the St. Lawrence River were incorporated into the interpretive programs of National Parks of Canada in Quebec, Quebec national parks and National Wildlife Areas in Quebec. Hundreds of thousands of visitors learned about the ecological value of the St. Lawrence River.

Public access to the St. Lawrence

Projects facilitating public access to the St. Lawrence were undertaken in three new municipalities. The Baie-Saint-Paul wharf will be restored, a means of access to the St. Lawrence at Baie-du-Febvre will be created and riparian marshes in Sainte-Anne-de-la-Pérade will be enhanced. Work is continuing to revitalize the Lachine Canal, which will reopen to pleasure boating on schedule in 2002.

Impacts of water level variations

In 2000-2001, complementary work was carried out by the Water Levels Subcommittee and the International Lake Ontario–St. Lawrence River Study Board of the International Joint Commission (IJC). A number of the team's scientists working on water levels helped to establish the IJC's Plans of Study to Review Lake Ontario–St. Lawrence River Regulation and to develop projects of the various technical groups in charge of the studies. Some current projects have received funding from the IJC. However, most of the projects developed in cooperation with the Study Board will get under way in 2001-2002.

In order to gain a better understanding of the impact of fluctuating water levels on the fluvial ecosystem, bathymetric surveys, current measurements, erosion measurements, fish catches, songbird surveys, mapping of aquatic plants, a pleasure boating survey and other field work were carried out between March and November 2000.

Finally, more detailed measurements of the St. Lawrence River's profile in the Sorel wetlands and delta and new current measurements were incorporated into the model of the river's hydrodynamic behaviour between Montreal and Trois-Rivières in order to improve its performance.

Monitoring the state of the St. Lawrence

Work carried out in 2000 resulted in the creation of a program to monitor the state of the St. Lawrence. The program is made up of activities already carried out by the program's government partners (Environment Canada, the Ministère de l'Environne-

MONITORING ACTIVITIES

ECOSYSTEM COMPONENTS	ACTIVITIES
Water	• Toxics (metals and organic compounds (River) • Toxics (organics) at the mouth of two tributaries • Hydrometric network • Physical, chemical and bacteriological parameters (River) • Safety of shellfish water • Physico-chemical parameters (Estuary and Gulf) • Safety of potential swimming sites
Riverbed	• Toxics (metals and organic compounds)
Biological Resources	• Area and fragmentation of wetlands • Invasive plant species in wetlands • Monitoring of fish communities (fresh water) • Toxic fish contamination (fresh water) • Seabird populations • Status of the northern gannet population • Status of the great blue heron population • Status of the beluga population • Phytoplankton and zooplankton communities (Estuary and Gulf) • Toxic algae monitoring (Estuary and Gulf) • Contamination of marine biota by toxics • Monitoring of native mussel populations (fresh water) • Monitoring of frog populations

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ment du Québec, the Société de la Faune et des Parcs du Québec and Fisheries and Oceans Canada) and the development of complementary activities. A memorandum of understanding for cooperation between the partners will be drawn up to establish the program's terms and conditions.

The monitoring activities selected, which appear before, affect the main components of all or part of the St. Lawrence ecosystem.

Monitoring activities are being developed to acquire new data and analyse existing data in greater depth. Environmental indicators are established on the basis of all available information. Summary fact sheets on these indicators are being written.

COMMUNITY INVOLVEMENT

Riverside communities' involvement in the protection and enhancement of the St. Lawrence is primarily seen in the cooperation of various local players towards the achievement of concrete community projects. Numerous projects have been carried out under the *Area of Prime Concern* (ZIP), *Biosphere Ecowatch Network* and *Community Interaction* programs.

ZIP program

The ZIP program, which encourages riverside communities' participation in safeguarding the St. Lawrence, was renewed under Phase III. SLV 2000 government partners recognizing the importance of community involvement renewed their agreement with Stratégies Saint-Laurent (SSL), the organization that has been coordinating riverside communities for the past several years. The agreement sets out SSL's role in coordinating, fostering concerted action under and promoting the ZIP program.

There are three main steps involved in implementing the ZIP program: preparing regional assessments reports, consulting the public in the targeted areas to set priorities for action and setting out the actions to be undertaken in an *Environmental Remedial Action Plan (ERAP)*.

In 2000-2001, SSL helped to create the 14th ZIP committee, Sud-de-l'Estuaire, for the southern St. Lawrence estuary. A regional assessment report summing up what is known about the biological, physico-chemical and socioeconomic resources of the Varennes–Contrecoeur sector was presented at public consultations organized by the Des Seigneuries ZIP Committee in fall 2000. The event gave residents an opportunity to voice their opinions on actions that should be given priority in their community and included in an ERAP.

The 12 other ZIP committees began or continued carrying out their ERAPs. Several of the resource conservation, restoration and enhancement projects following from the action plans received scientific and technical support from both levels of government. Two examples of recent community projects are the stabilization and naturalization of the shores of the south point of Charron Island by the Ville-Marie ZIP Committee and the development of a comprehensive enhancement concept for the St. Lawrence which includes cross-shore links by the Quebec City and Chaudière–Appalaches ZIP Committee in cooperation with community stakeholders.

A regional tour of the Haut Saint-Laurent and Jacques-Cartier ZIP Committees brought together 40 government and ZIP committee representatives in a workshop setting. The ZIP committees were able to develop strong links with several federal and provincial departments, which provided support for their actions and ensured that their actions complemented one another.

Disseminating up-to-date information on the St. Lawrence

The *Biosphere Ecowatch Network* currently has 94 member organizations, 85 of which are located in the St. Lawrence basin. These schools, companies, municipalities and non-governmental organizations are involved in gathering, pooling and sharing scientific information and popular experience (citizen science) on the

TARGET RESULTS FOR
March 31, 2003

Help build consensus in 14 riverside communities (ZIPs) on local environment issues under the coordination of Stratégies Saint-Laurent.

Give scientific and technical support to the ZIP committees.

Disseminate high-tech information on the St. Lawrence by way of the Biosphere Ecowatch Network and of an expertise and scientific popularization centre on health and environment.

Support the implementation of 150 community projects arising from ERAPs or the communities, giving priority to access to the St. Lawrence and recovery of uses.

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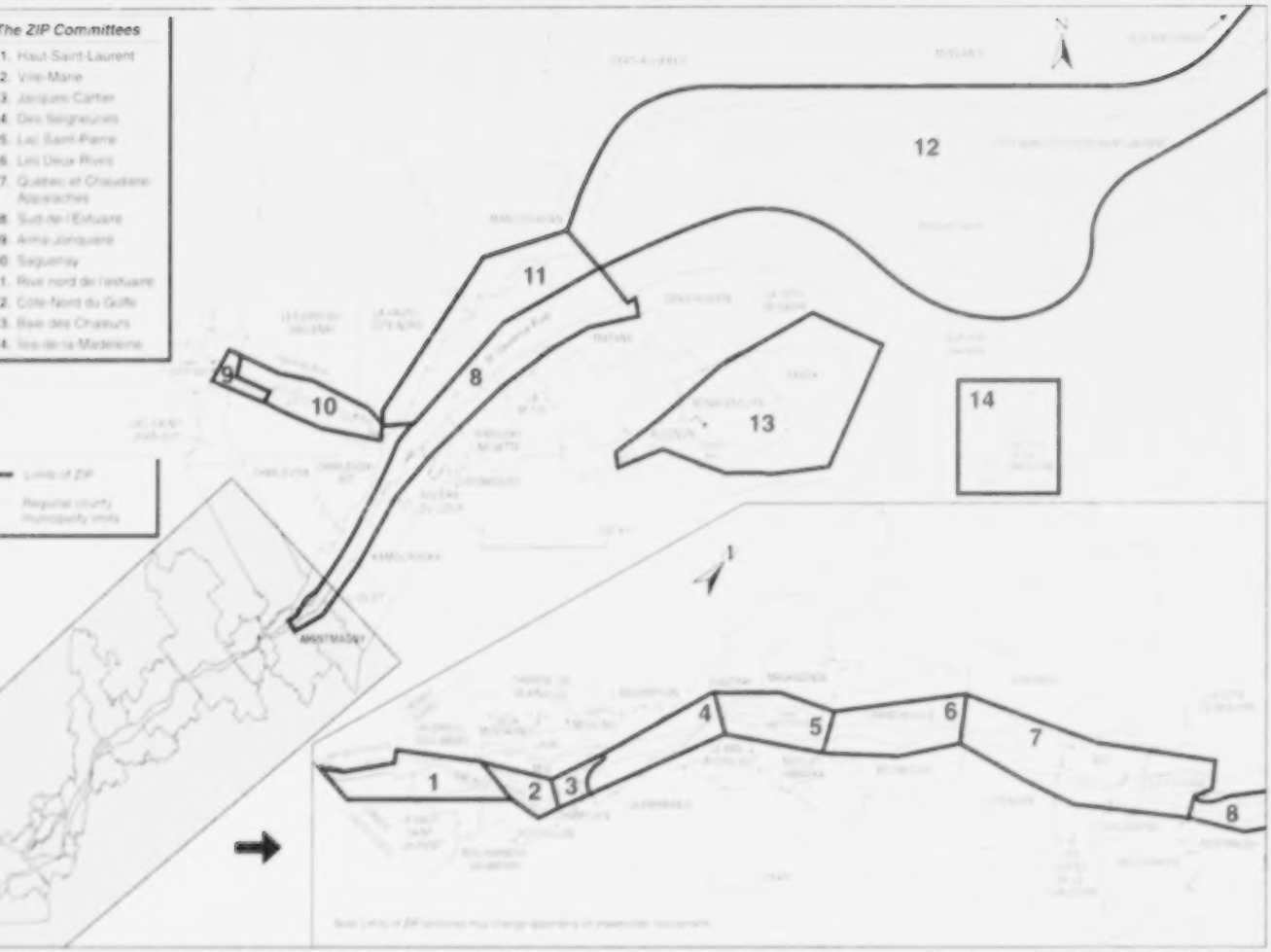
ZIP COMMITTEE TERRITORIES



Great Lakes–St. Lawrence waters and ecosystem. A number of communication tools, such as e-mails and newsletters, are used to provide members with information on the river and SLV 2000 achievements.

In 2000-2001, more than 4,000 young people and nearly 1,500 adults continued to take part in the Network's projects. Among the most popular activities were school projects, such as the Freshwater Fish Ecowatch Network and *Adopt a River*, as well as the Lower St. Lawrence Marine Mammal Ecowatch Network, which attracts mainly business people. An agreement was also signed with the International Development Research Centre (IDRC) naming the Biosphere as the coordinator of Canadian schools participating in AQUAtox 2000, an international school network concerned with water toxicity.

Community interaction program

In Phase III, the *Community Interaction* program is being jointly funded by three government partners: Environment Canada (EC), the Ministère de l'Environnement du Québec (MENV) and the Société de la faune et des parcs du Québec (FAPAQ). The maximum funding given to organizations is equivalent to 50% of the eligible value of a project, up to $100,000, while studies can receive 70% of the total value of the project, up to $30,000.

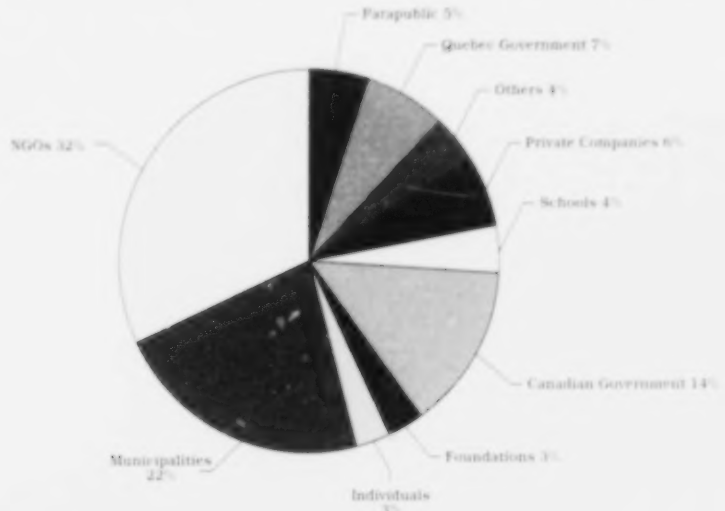
Virginia creeper planted by volunteers along the fence
Photo: Eddy Bertrand
ZIP Alma-Jonquière

During the first three years of Phase III, 97 organizations submitted project proposals. To date, 104 projects have received funding under the program totalling $4.3 million. In 2000-2001, 30 new projects were selected. At this rate, it should be possible to reach the objective of implementing 150 projects by March 2003.

Community support for implementing projects totals $6.6 million. Since the total value of the projects funded is $10.3 million, the community contributes almost 65% of the investment required. The following chart provides a breakdown of the funds they have invested. Most of the funding comes from proponent organizations and other environmental and community organizations. It also shows the strong municipal participation. Government contributions refer to departments and agencies other than those supporting the program (EC, MENV, FAPAQ).

Moreover volunteers contribute more than 4,000 person days and the projects implemented have created many types of jobs for the equivalent of 83 person years. In terms of protection and conservation, nearly 100 hectares of habitat have been officially acquired by community organizations and many other protection and conservation initiatives are in the works.

BREAKDOWN OF FUNDING PROVIDED BY THE COMMUNITY



INDUSTRIAL AND URBAN

TARGET RESULTS FOR
March 31, 2003

Acquire and process information on the following industrial sectors: metallurgy, metal and chemical so as to give priority to interventions with respect to the 18 priority toxic substances.

Develop environmental management tools for the metallurgy, metal and chemical sectors.

Introduce preventive projects in 60 plants (20 per sector) and evaluate the environmental and economic gains.

Proceed to the control and inspection in the industrial sector.

Provide technical expertise and financial support to promote refinements, adaptation and commercialization of new technologies and facilities to prevent pollution.

Measure toxicity of effluents from three major metropolitain areas (Montreal Urban Community, Quebec Urban Community, Outaouais Urban Community) and nine other municipalities in order to support corrective measures.

Complete the reduction of toxic liquid effluents from 10 Phase II priority plants (90% or optimal reduction to achieve virtual elimination).

Introduce an environmental awards program for the industrial plants targeted under the first two phases of the St. Lawrence Action Plan.

The main achievements of the Industrial and Urban component in 2000-2001 were a study of the toxic potential of effluents from municipal wastewater treatment plants in Quebec, the *Environmental Awards Program for Industrial Plants*, targeted during Phases I and II and the implementation of the *Pollution Prevention Program* in Small and Medium sized Enterprises (SMEs).

Profile of SME sectors

Information is still being gathered to complete the profile of SMEs in the three SLV 2000 target sectors, namely chemicals, metal surface treatment and metallurgy. This profile will provide an environmental portrait of Quebec's SMEs, their commitment and their legal context with regard to the environment. It will contain a breakdown of SMEs in the three target sectors based on the type of industrial activity and the number of employees, administrative regions and environmental problems for each one.

Pollution prevention projects in 60 SMEs

Small and medium-sized enterprises participate in the pollution prevention program on a voluntary basis. The program's success thus hinges on the number of industrial plants recruited. Although there is clear evidence that pollution prevention is cost effective from both an environmental and a financial standpoint, SMEs have been somewhat reluctant to sign up for the new program.

Two consultants were hired to establish environmental diagnoses and recruit SMEs. One is responsible for the chemical sector, while the other is in charge of metallurgy and surface treatment of metals. In order to boost recruitment and meet the goal of 60 SMEs diagnosed by March 2003, the Ministère de l'Environnement du Québec (MENV) and Environment Canada will play an active role in recruiting industrial plants.

A concrete example of government participation in recruitment can be seen in the efforts made to target SMEs in Granby. Data gathered during an assessment of toxicity at the city's water treatment plant suggested that residual contaminants may be affecting the receiving water. The municipality has agreed to enhance pollution prevention initiatives among SMEs in the three targeted sectors in order to reduce at the source contaminants discharged into the municipal system.

Control and inspection in the industrial sector

MENV's regional directorates strive to protect the environment by analysing requests and issuing certificates of authorization under the *Quebec Environment Quality Act*. The certificates are issued prior to the implementation of, changes to, or increase in the production of any industrial activity that could affect environmental quality. The regional directorates also inspect and monitor industrial plants to ensure their compliance with the Act and its regulations.

Development of new technologies

The Idea-SME program provides small and medium-sized enterprises with scientific, technical and financial support for activities involving the marketing and technological demonstration of products, processes and

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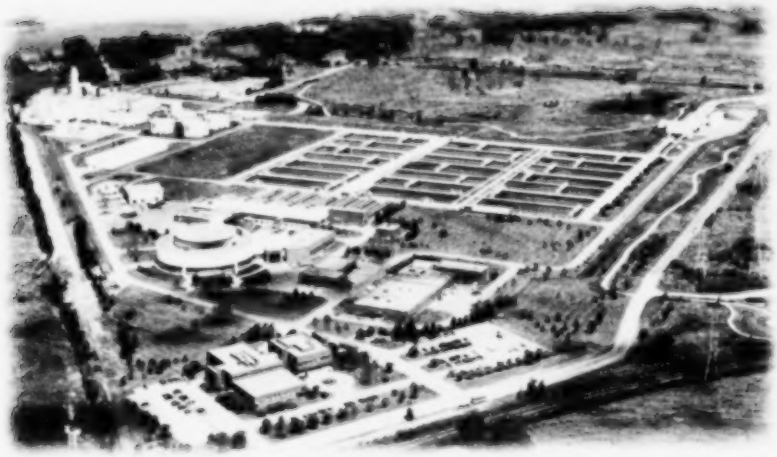

Montreal Urban Community (MUC) wastewater treatment plant
Photo : MUC

prototypes in the environment field. Since the start of Phase III, 12 projects have been completed and 16 others implemented, for a total investment of $30 million, of which $5.6 million came from the program. Projects under way in 2000-2001 fall under two cornerstone platforms that provide more effective support for various research, development and demonstration activities: The *Alternative Fuel Vehicle Technology Platform* and the *Montreal Centre of Excellence in Environmental Site Remediation*.

Toxicity of municipal effluents

A study begun during Phase II to assess the toxic potential of the effluents from Quebec's municipal wastewater treatment plants was completed in 2000-2001. Using a representative sample of 15 municipal treatment plants, the toxicity of effluents for aquatic life and the long-term toxic potential for human and piscifauna diets were measured.

Toxicity test results show that the treated wastewater at the majority of the plants still exhibited some toxicity before it was diluted in the receiving water. However, since the amount of toxicity was slight, the municipal effluents are not harmful for the aquatic organisms tested, with a few exceptions. Ammonia nitrogen and surfactants contained in household and industrial cleaning agents were the main sources of the toxicity detected. Other substances, such as some pesticides and metals, could also be responsible.

The assessment of long-term toxic potential pointed up the presence of organic substances in municipal effluents that have been rarely quantified until now, namely PCBs and chlorinated dioxins and furans, which are occasionally found at concentrations that could contaminate fish, which could still be eaten under some conditions. However, in order to evaluate the substances' real impact, we need to consider the amount dis-

charged daily relative to the carrying capacity of the receiving environment.

The study further showed that the municipal wastewater treatment plants that are in compliance with MENV discharge requirements might have difficulty reducing the toxicity of their effluents even further. Rather, efforts should be focused on reducing toxicity at the source.

Priority industrial plant awards program

The goal of the awards program for 107 priority industrial plants targeted in Phases I and II of the St. Lawrence Action Plan was to publicly recognize the plants' contribution to the reduction of toxic liquid discharges and to the long term virtually elimination of 11 persistent bioaccumulative toxic substances. Plants receive a certificate after implementing measures to clean up their effluent and modify their industrial processes.

Of the 107 plants involved in the program, 72 received certificates in spring 2000 while 11 were no longer in operation. The remaining 24 still had to be assessed; they were unable to complete their activities and achieve SLV 2000 objectives for various reasons. In spring 2001, five of the plants received certificates, 13 were notified that they would not be receiving them and six were given an extension until July 2001. Once the last six plants are assessed, the awards program will come to an end and a summary will be produced.

NAVIGATION

TARGET RESULTS FOR
March 31, 2003

Develop and implement a navigation management strategy consistent with sustainable development on the St. Lawrence and in cooperation with the shipping industry, environmental interests, the governments and the public.

Establish a dredging mechanism to monitor activities on the St. Lawrence.

Produce or update tools to improve sediment management practices.

Implement a management plan for contaminated sites that may present a risk for the ecosystem.

Develop tools and manuals to improve the management of risks and environmental threats in a context of sustainable navigation on the St. Lawrence.

Protect the banks of the St. Lawrence against erosion caused by shipping and boating.

Introduce regulations or a code of good practice governing discharge of ballast water.

The main objective of the Navigation component is to develop a sustainable navigation strategy that incorporates the objectives and results of the activities undertaken since 1998. These activities come under the responsibility of the Navigation Cooperation Committee, which is made up of representatives of the federal and provincial governments, the maritime and port industries and community and environmental groups. Ten non-governmental organizations are represented on the committee: the Montreal Port Authority, Les Amis de la vallée du Saint-Laurent, the St. Lawrence Ship Operators Association, the Corporation of Mid St. Lawrence Pilots Association, the Québec Sailing Federation, the Shipping Federation of Canada, the Canadian Coast Guard Auxiliary, the St. Lawrence Economic Development Council, the Société d'initiative et de conservation du Bas-Richelieu and Stratégies Saint-Laurent. More than 20 people are involved in discussing the issues and developing and implementing the sustainable navigation strategy.

Sustainable navigation strategy

The sustainable navigation strategy advocates the management of commercial shipping and pleasure boating activities and practices that is in harmony with current and future environmental requirements and that ensures that the St. Lawrence ecosystem and its resources are protected.

The strategy will be based on study findings, proposals from Navigation Cooperation Committee members and a series of public activities. The studies provide an environmental assessment of shipping in the St. Lawrence. One of them, a comparative analysis of the environmental impact of various modes of transporting goods, sheds new light on the impacts of shipping. The aim of public activities is to obtain comments and suggestions from a larger number of stakeholders on ways to improve the strategy.

Sediment and dredging management

Work in the area of dredging and sediments management has made considerable progress. Participants at an October 2000 technical workshop reviewing provisional criteria for the assessment of sediment quality took stock of the problem and identified upcoming issues. A general analysis of all dredging operations in the St. Lawrence was conducted and an outline of solutions that could help improve the project assessment and knowledge acquisition process was prepared. Subsequently, a method aimed at applying integrated management principles to dredging operations and sediments will be developed.

Two new studies provide a comprehensive view of dredging activities and address the administrative, socio-economic and environmental aspects.

Management plans for contaminated sites

Considerable progress was made towards the implementation of management plans to restore sector 103 of the Montreal harbour area and the mouth of the St. Louis River in 2000-2001. The Jacques-Cartier ZIP Committee set up a restoration group for sector 103 and obtained a financial commitment of over $5 million from four partners: Shell, Esso, Noranda and the Port of Montreal. The Haut Saint-Laurent ZIP Commit-

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Photo: Denis Chamard, Fisheries and Oceans Canada

tee formed a voluntary partnership to restore contaminated sediments in the St. Louis River that led to a financing agreement between Alcan Beauharnois and PPG Canada. Consequently, a contaminated sediment remediation plan expected to cost between $3 and $5 million will be carried out.

Environmental risk and danger management

Various management tools and forecasting models have been developed or are being designed. They will help improve the knowledge required to determine and use the best response to hazardous situations and will increase prevention efforts in the area of navigation.

A simulated oil spill and experiment with bioremediation techniques were carried out in beds of aquatic vegetation at St. Croix de Lotbinière by Fisheries and Oceans with Environment Canada, the Ministère de l'Environnement du Québec and others organisations like United States Environmental Protection Agency and Centre of documentation, research and experimentations on accidental water pollution of France. Drawing on the lessons learned from the project, a guide and response protocols tailored to conditions in the St. Lawrence will be drafted. Water level forecasting data were also incorporated into the Coastal and Ocean Water Level Information System (COWLIS), a tool currently being used by the Canadian Coast Guard of Fisheries and Oceans that strengthens shipping safety on the St. Lawrence and facilitates load and ship transit planning.

Shoreline erosion

Following on studies that provided an inventory of sensitive stretches of shoreline and sectors subject to the wave action of ships in the Sorel-Verchères section, the marine industry adopted a voluntary measure to

reduce vessel speed in fall 2000. The Canadian Coast Guard is monitoring the situation and encouraging pilots to comply with the measure. Initial results are encouraging and a high compliance rate has been observed. The voluntary character of this measure is worthy of mention and is firm evidence of the marine industry's environmental awareness. Talks have been initiated with representatives of the Regional Pleasure Boating Advisory Committee in order to develop tools to create awareness of the environmental impact of recreational activities.

An interactive map of erosion-sensitive sectors between Cornwall and Montmagny is being prepared and will be posted on SLV 2000's Internet site.

Ballast water

Regulations governing the accidental introduction of exotic species from ballast water of ships were evaluated by the Navigation Cooperation Committee at an April 2000 workshop. Additional regulatory needs and, if applicable, amendments to prevent the introduction of new exotic species that are potentially harmful for biodiversity in the St. Lawrence were submitted to Transport Canada, which will be issuing new guidelines in this regard. At the same time, the Canadian Marine Advisory Council has adopted voluntary measures applicable to vessels travelling in Canadian territorial waters.

HUMAN HEALTH

Several projects are being carried out under the Human Health component in order to achieve SLV 2000's health objectives. The aim of these projects is to learn more about the potential risks inherent in various uses of water and aquatic products from the St. Lawrence River and Golf. A number of research projects undertaken between 1998 and 2000 have been completed. These studies evaluated the perception and characterization of health risks. In addition, epidemiological studies regarding certain pathogenic microorganisms that can be found in drinking water have been initiated. Communications products focused on health prevention and promotion have also been produced for the general public.

TARGET RESULTS FOR
March 31, 2003

Reduce the public's exposure to waters used for outdoor recreation where there is a risk of microbiological contamination.

Reduce public exposure to drinking water where there is a risk of chemical and microbiological contamination.

Reduce the public's exposure to consumption of aquatic products where there is a risk of organic and inorganic contamination.

Recreational waters

Research was carried out on a recenly observed phenomenon, namely the presence of toxin-producing cyanobacteria (blue-green algae) in the watersheds of three of the St. Lawrence's tributaries—the L'Assomption, Châteauguay and Yamaska rivers. The study found considerable concentrations of these bacteria in a number of swimming areas in the Yamaska River watershed only. Under some circumstances, the number of cyanobacteria was sufficiently high to create a potential risk during primary-contact activities (swimming, water skiing).

A pilot study among personal watercraft and other pleasure craft operators on the St. Lawrence River found different perceptions of boating safety, the detrimental aspects of personal watercraft use and the health risks associated with the bacteriological quality of the St. Lawrence River. The study's findings indicated that non-personal watercraft users tended to perceive a higher risk for safety. In addition, noise pollution related to personal watercraft use is an irritant more often reported by other users of the St. Lawrence.

In order to inform and educate the public about precautions to take when swimming and fishing in the St. Lawrence, fact sheets containing useful information and advice were distributed. Posters about the practice of these activities in the Montreal region are on display at the Biosphere, while postcards containing information about their practice all along the St. Lawrence were distributed. A spirit of cooperation between Human Health component partners and educators associated with environmental information developed in the course of this activity.

Drinking Water

Data gathered in Phases II and III show that, although water drawn from the St. Lawrence is of fairly good quality, it still contains certain pathogenic microorganisms (such as viruses, bacteria and protozoa) that may cause health problems for users.

An epidemiological case-control study was undertaken to determine whether water from the St. Lawrence River and its tributaries is a significant cause of giardiasis (intestinal infection caused by the protozoan flagellate giardia lamblia). An epidemiological study on intestinal diseases and water quality was also undertaken in the Montérégie.

Research on toxins produced by cyanobacteria, specifically microcystins and anatoxin-a, was conducted in drinking water treatment plants

HUMAN HEALTH

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in the Yamaska River watershed and in a stretch of the L'Assomption River downstream of Joliette. A generalized presence of microcystins was found, but at concentrations 100 times below Health Canada guidelines. These toxins are not, therefore, a significant human health risk.

Seafood and other products of the river

A study of 512 waterfowl hunters found that their consumption habits did not constitute a health risk, and thus there was no reason to impose specific rules. However, hunters who are also large consumers of predatory fish should comply with current fish consumption rules in order to limit their exposure to mercury.

According to another study, the urban poor have very little exposure to contaminants in aquatic products as fishing is not a common activity in their communities. When they do engage in this activity, it tends to produce positive psychosocial health effects.

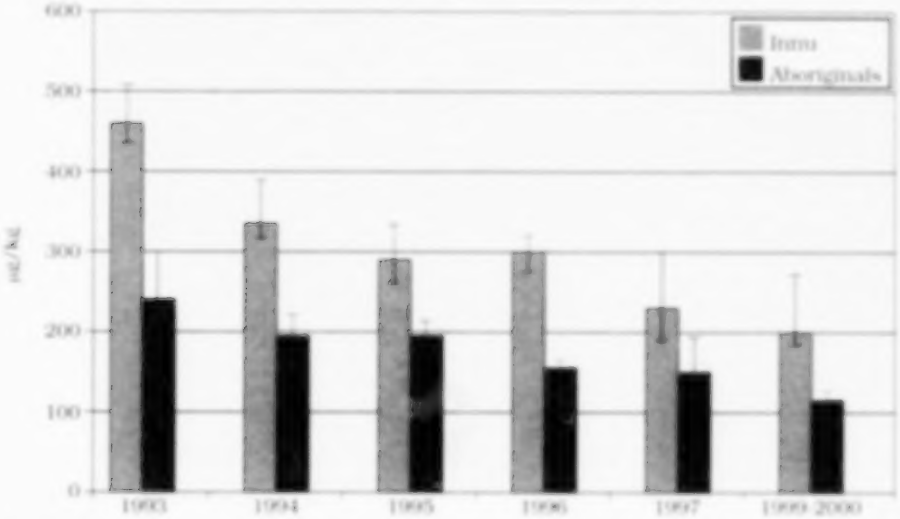
A study of Saguenay ice fishers found that even among large consumers of saltwater fish in the fjord, blood mercury and PCB levels were all below acceptable levels. Dioxin and furan exposure scenarios do not provide any indication that the amounts deemed safe are being exceeded. Seasonal consumption of species caught in winter in the Saguenay fjord is therefore not a health danger for sport fishers based on the consumption habits observed.

A final analysis of PCB time trends in newborns of women living in different communities along the North Shore produced encouraging results. Since 1993, there has been a fairly constant decline in PCB concentrations. In 2000, they reached the levels measured for all of Quebec between 1993 and 1995 (211 µg/kg). In addition, the decline observed was not accompanied by a drop in fish consumption, which provides omega-3 fatty acids that are essential for the infants' health and development. The decline in PCB concentrations is the result of a decline in the consumption of sea eggs, which are often contaminated, and improvements in the quality of the resources in the area.

Photo: Francoise Lapointe, Environment Canada

The program to monitor ailments caused by shellfish consumption has helped to measure the scale of the problem and create awareness among health care workers. The Rive nord de l'Estuaire, Baie des Chaleurs et Îles-de-la-Madeleine ZIP committees worked with health care workers to set up a campaign to alert the public to the dangers of eating shellfish in their respective regions. A pilot study tested the effectiveness of various means of conveying information about eating fish. The results seem to show that providing information

GEOMETRIC MEAN OF PCBs IN NORTH SHORE NEWBORNS BASED ON ETHNICITY AND YEAR OF BIRTH



about the hazards involved had more of an effect on participants' knowledge than on their behaviour, regardless of the means of communication used.

Research was also carried out on the effects of environmental contaminants and new methods to measure these compounds. One study looked at the consequences of seasonal mercury exposure in sport fishers with a view to measuring the reversibility of neuromotor effects.

Finally, an information guide on the nutritional content of aquatic products in the St. Lawrence is currently being produced. This project follows on the heels of a food guide on the nutritional qualities of sport fish harvested from Lake St. Pierre, which was published in 1999-2000.

COMMUNICATIONS

A number of activities related to institutional communications and the six components of the St. Lawrence Vision 2000 Action Plan have been carried out. The Canadian and Quebec government partners in SLV 2000 continued their efforts to provide the public with information on the results obtained, progress made and initiatives implemented in 2000-2001.

Various means of communications were used, including the SLV 2000 Internet site, the *Le Fleuve* newsletter and various reports, assessments and studies. Meetings and special events were organized to foster an exchange of information and expertise among scientists, managers and the media. The partners also took part in a number of public events.

In short, special attention was paid to disseminating the latest information about the environment of the St. Lawrence River and to promoting the findings related to the major issues in each component.

INSTITUTIONAL COMMUNICATION ACTIVITIES

Production and distribution of the *1998-2000 Biennial Report*.

Participation in various public events, such as a seminar on integrated resource management and activities for Lake St. Pierre, the Millennium Wetland Event Quebec 2000, Annual Public Health Days, the Pan-American Environmental Technology Trade Show – AMERICANA, and an Advisory Committee forum on the theme of partnership.

Production and posting of 10 *Le Fleuve* newsletters on the SLV 2000 Internet site (www.slv2000.qc.ec.gc.ca/bibliotheque/lefleuve/accueil_a.html).

Advertisements in the magazines *Globe*, *Découvrir* and *Vecteur Environnement*.

Information posted on the SLV 2000 Internet site:

- 327 publications from various components were made available on line, particularly reports, assessments, studies and press releases;
- four new sections were made available on line (An Overview of the St. Lawrence River, Twenty Years of Action, St. Lawrence Vision 2000 Action Plan, and Groups Working Together);
- a list of projects funded by the *Community Interaction* program during Phase II and III.

COMMUNICATION ACTIVITIES IN THE VARIOUS COMPONENTS

Agriculture

Update of the Internet site on Quebec's agroenvironmental support program for its pest management strategy, the *Stratégie phytosanitaire – Programme agroenvironnemental de soutien à la Stratégie phytosanitaire* (www.agr.gouv.qc.ca).

Production and dissemination of the contents of a course on integrated pest management methods for apple orchards, entitled *Gestion intégrée des ennemis de la pomme*.

Production and dissemination of a brochure on reducing herbicides in potato crops, entitled *Réduction des herbicides – pomme de terre*.

Production and dissemination of a brochure on alternatives to chemical control in apple growing, entitled *Training suited to the needs of apple producers*.

Production and dissemination of a guide on integrated pest management methods for apple orchards, entitled *Guide de gestion intégrée des ennemis du pommier*.

Production and dissemination of a binder on pesticides for Lower St. Lawrence farmers, entitled *Cartable d'information sur les pesticides pour les producteurs agricoles de la Côte-du-Sud (Bas Saint-Laurent)*.

Biodiversity

Launch of the *Biodiversity Portrait of the St. Lawrence* Internet site (www.qc.ec.gc.ca/faune/biodiv/).

Production and dissemination of a brochure, bookmark and CD-ROM to promote the *Biodiversity Portrait of the St. Lawrence*.

Dissemination of new data on the *St. Lawrence Observatory* Web site (www.osl.gc.ca).

Release of numerous scientific communications about the issue of fluctuating water levels to the media, particularly at public events: the 69th conference of Acfas, the Millennium Wetland Event – Quebec 2000, the annual meeting of the Society of Canadian Limnologists, the 43rd conference of the International Association for Great Lakes Research and the 4th International Conference on GIS and Environmental Modelling. Several scientific reports and articles were also published (see the list of publications, page 45).

Community Involvement

Dissemination and submission of a regional assessment report for the Varennes–Contrecoeur region to the Des Seigneuries ZIP Committee.

Promotion of SLV 2000 at public consultations held by the Des Seigneuries ZIP Committee.

Dissemination of press releases announcing projects funded by the *Community Interactions* program.

Industrial and Urban

Production and dissemination of a report entitled *Assessment of the Toxic Potential of Municipal Wastewater Treatment Plant Effluents in Quebec*.

Announcement of recognition certificates awarded to Quebec industrial plants that helped to achieve objectives to protect the St. Lawrence.

Navigation

Design and creation of an ad promoting the Navigation component.

Advertisements in the 2000-2001 edition of The *Montreal Port Guide*, issue 18 of *Maritime Magazine* and the magazine *Découvrir*.

News release announcing the adoption of voluntary measures to reduce the speed of commercial vessels between Sorel and Montreal.

Production of a pamphlet on the Navigation component and posting on the SLV 2000 Internet site.

Human Health

Activities to create awareness about the potential risk of shellfish consumption on human health carried out by three ZIP Committees.

Press conference and St. Lawrence Vision 2000 booth in the Magdalen Islands for the launch of an awareness campaign on the health risks of eating shellfish.

Presentation of seminar that brought together a number of scientific experts on mollusk and bivalve consumption and the related health risks.

Production of numerous scientific reports and articles.

Participation of the Human Health component in the Pan-American Environmental Technology Trade Show – AMERICANA.

Production and permanent display at the Biosphere of two posters on the health aspects of swimming and fishing in the St. Lawrence.

Production and dissemination of postcards on the same topics for the St. Lawrence as a whole.

GOVERNMENT EXPENDITURES 2000-2001

		COMPONENTS							
	Governments	**Community Involvement**	**Biodiversity**	**Human Health**	**Industrial and Urban**	**Navigation**	**Agriculture**	**Communications and Coordination**	**Total**
C	Environment Canada	2 435	3 858	1056	1 242	926	688	896	11 101
A	Fisheries and Oceans Canada	148	2 283			897			3 328
N	Parks Canada		6 273						6 273
A	Canada Economic Development		1 058		412				1 470
D	Health Canada			1 098					1 098
A	Agriculture and Agri-food Canada						200		200
	Public Works and Government Services Canada		90			20			110
	Transport Canada		165			19			184
Q	Ministère de l'Environnement								
U	du Québec	246	240		3 222	67	3 216	165	7 156
É	Société de la faune et des parcs du Québec	418	1 212			36		68	1 734
B	Ministère de la Santé et des Services sociaux du Québec			599					599
E	Ministère des Transports du Québec					67			67
C	Ministère de l'Agriculture, des Pêcheries et de l'Alimentation du Québec						36 927		36 927
	Total (in thousands of dollars)	**3 247**	**15 179**	**2 753**	**4 876**	**2 032**	**41 031**	**1 129**	**70 247**

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NOTES

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